HOST RECORDS (FAMILY ASCLEPIADACEAE) AND DISTRIBUTION OF *DANAUS CHRYSIPPUS PETILIA* (STOLL) (LEPIDOPTERA: NYMPHALIDAE) IN AUSTRALIA

Paul I. Forster

Queensland Herbarium, Meiers Rd, Indooroopilly, Qld, 4068

Abstract

The species of the family Asclepiadaceae that are hosts in Australia for larvae of *Danaus chrysippus petilia* are reviewed and their distribution discussed. *Brachystelma glabriflorum* (F. Muell.) Schltr., *Cynanchum christineae* P. Forster and *C. liebiana* (F. Muell.) P. Forster are recorded as new hosts.

Introduction

Danaus chrysippus petilia (lesser wanderer) has been recorded over the entire Australian mainland and also in New Guinea (Common and Waterhouse, 1981). Some 48 different Asclepiadaceae have been recorded as larval food plants for various subspecies of *D. chrysippus* (Ackery and Vane-Wright, 1984). In Australia previously recorded larval food plants in the Asclepiadaceae for the subsp. *petilia* are the native *Cynanchum carnosum* (R. Br.) Schltr. [as *Ichnostemma carnosum*], (Sankowsky, 1975); *C. floribundum* R. Br., *Marsdenia australis* (R. Br.) Druce [as *Leichhardtia australis*], *Pentatropis linearis* Decne. [as *P. atropurpurea* and *P. quinquepartita*] (Common and Waterhouse, 1981) and the naturalised *Asclepias fruticosa* L., *A. curassavica* L., *A. cancellata* N.L. Burm. [as *A. rotundifolia*] (Common and Waterhouse, 1981), *Calotropis gigantea* (L.) Ait. and *C. procera* (Ait.) Ait. f. (Sankowsky, 1975).

Observations

The following new host records for larval feeding have been made. No vouchers of the butterflies were kept, vouchers of the plants have been deposited at the Queensland Herbarium (BRI).

1. *Brachystelma glabriflorum* (F. Muell.) Schltr.

(a) Wild plants (Vouchers: Forster 5912, 6062) at Berry Springs, Northern Territory (12°43'S 130°59'E) and near Finnis River Station road turn-off, Bynoe Road, N.T. (12°44'S 130°50'E). Feeding from third instar larvae to pupation observed, November 1989. Eggs are laid on young shoots or buds and the larvae feed primarily on the leaves, young shoots, buds and flowers and ignore the older stems. Individual larvae shredded the usually solitary shoot of each plant and then climbed down to the ground, moved to another plant and repeated the process. It was not observed whether more than two shoots were consumed by an individual larva as most larvae tended to disappear before pupation, presumably due to predation. The only pupa that was found was attached to a stem approximately 5 cm above the soil surface.

(b) Cultivated plants (Voucher: Forster 1768) at Didcot, Qld (25°28'S 151°53'E). Feeding of third instar larvae observed, April 1990.

This plant is fairly widespread in northern Western Australia, Northern Territory and Queensland in Australia and also grows in New Guinea (Forster, 1988a). Plants tend to occur in small concentrated colonies of up to several dozen individuals in a few square metres.

2. *Cynanchum christineae* P. Forster.

Wild plants (Voucher: Tingey [AQ408486]) at Palmerston, N.T. (12°29'S 130°58'E). Oviposition and feeding of up to at least third instar larvae, December 1987 (C. Cox & R. Tingey, pers. comm. 1988). Eggs are laid on young buds. This plant has only been recorded from the Darwin region, N.T. (Forster, 1989).

3. *Cynanchum liebiana* (F. Muell.) P. Forster.

Wild plants (Voucher: Tingey [AQ408479]) at Palmerston, N.T. Oviposition, feeding and development to third instar larvae, December 1987 (C. Cox & R. Tingey, pers. comm. 1988). This plant has only been recorded from the Darwin region, N.T. (Forster, 1989).

Discussion

The three new larval host plants recorded here are inconspicuous geophytic herbs that shoot from perennial rootstocks and make rapid growth with the first storms of the wet season in October and November. These plants flower during this short period and by late December, most are fruiting or producing only leaves. Feeding by the lesser wanderer larvae reduce the number of plants available for cross-pollination and must also reduce the amount of dry matter that is available for retranslocation to the tubers or fleshy rootstocks by which these plants survive during the dry season. *C. christineae* and *C. liebiana* are presently considered as endangered species (Forster, 1989), although given their inconspicuous nature both may be much more widespread than the sparse collection records would indicate. Nevertheless management of areas in which they occur should take into account the predation by this butterfly. Although the other native Asclepiadaceae recorded as larval hosts (Common and Waterhouse, 1981) are evergreen perennials, it is unlikely that suitable foliage for larval feeding would be available throughout the year.

The native Australian Asclepiadaceae recorded as hosts for this butterfly occur naturally over much of the interior of Australia. In coastal areas of southwestern Western Australia, South Australia, Victoria, New South Wales and southern Queensland introduced hosts are often very common. Hence there is a range of plants available over the whole Australian mainland suitable, at least for part of the

year, as hosts and this is reflected in the wide distribution of the butterfly. In Tasmania, where the lesser wanderer has been collected but not observed to reproduce (Common and Waterhouse, 1981), no native or naturalised Asclepiadaceae occur.

Both *Cynanchum carnosum* and *Brachystelma glabriflorum* occur in New Guinea (Forster, 1988a; b) with the former restricted to coastal mangrove communities and the latter to grassland in southern Papua. Unless the lesser wanderer is restricted to these habitats it is probable that additional hosts are present and remain to be determined from the islands rich asclepiadaceous flora.

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